



# Glossary of Math Terms



Compiled by Heather S. Benson

**These terms are used in “Teaching and Learning about Math” articles, *Young Children*, January 2003, pp. 8–50.**

**Algebra**—math area that provides tools for picturing, stating, and simplifying relationships; generalization of arithmetic ideas by which unknown values and variables can be found in problem solving. Young children build a foundation for later algebra learning through activities with pattern, relationships, mathematic situations and structures, and change.

**Associativity (associative property of addition / grouping property of addition)**—property stating that when addends are grouped in different ways the sum is the same.

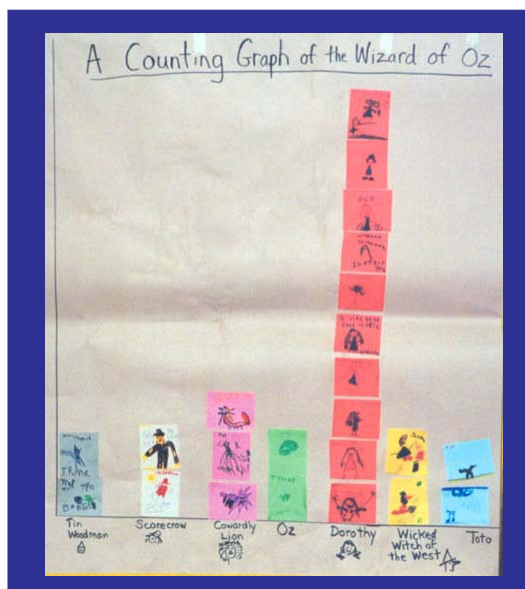
Example:  $(5 + 9) + 3 = 5 + (9 + 3)$

$$\begin{array}{c} \swarrow \quad \downarrow \quad \searrow \\ 14 + 3 = 5 + 12 \\ \swarrow \quad \downarrow \quad \searrow \\ 17 = 17 \end{array}$$

**Attributes**—characteristics like shape, size, color, number of parts, weight.

**Bar graph**—graph in which data are represented by horizontal or vertical bars.

Example: See counting graph below.



**Classification**—the process of sorting and grouping objects by a common attribute or property, such as color or size.

**Commutativity (commutative property of addition)**—property stating that when the order of two or more addends is changed, the sum is the same.

Example:  $4 + 5 = 5 + 4$

**Conservation**—the concept that objects remain the same in amount despite perceptual changes. For example, children who are able to conserve know that a cookie broken in half is equal in amount to another cookie left whole, or that a cup of milk (8 ounces) in a tall, narrow glass is equal to a cup of milk in a short, wide glass.

**Cylinder**—a three-dimensional figure with one curved surface and two parallel, congruent circles as bases.

**Data**—facts, such as measurements, collected about people or things; for example, how much the plants in the window grew over a one-week period or how many children in the class have pets.

**Equivalent fractions**—two or more fractions that use different numbers to name the same amount.

Example:  $\frac{3}{4} = \frac{6}{8}$

**Estimate**—to use judgment to find a number close to an exact amount.

**Graph**—a drawing or diagram showing a numerical relationship or displaying data.

**Hexagon**—a polygon with six sides.

**Identity property (identity property of zero)**—the property stating that the sum of zero and any number is that number.

Examples:  $0 + 25 = 25$ ;  $0 + a = a$

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**Inverse operations**—opposite operations that undo each other; addition and subtraction are inverse operations.  
*Example:*  $5 + 4 = 9$ , therefore  $9 - 4 = 5$

**Line symmetry**—characteristic describing a figure or shape that can be divided along a line so that the sections on either side of the line match exactly.

**Manipulatives**—easily handled concrete objects, such as beads, puzzles, and peg boards, that children can work with in ways that help them understand or explore mathematic concepts. For example, putting together a puzzle promotes children’s understanding of one-to-one correspondence.

**Octagon**—a polygon with eight sides.

**Operation**—four basic operations in arithmetic are used to solve problems: addition, subtraction, multiplication, and division.

**Pentagon**—a polygon with five sides.

**Pictograph**—graph using pictures to represent data.  
*Example:* See banana/apple pictograph below.



**Polygon**—a multisided, two-dimensional, closed figure whose sides are line segments connected end to end, with each segment intersecting two others at its endpoints.  
*Polygon* is derived from the Greek for *poly*, meaning many, and *gon*, short for *goinia*, which means angle.

**Predict**—to tell what might happen.

**Property**—feature or characteristic common to several items—for example, both blocks are red.

**Qualitative change**—change described using mathematic language incorporating relative mathematic labels like *smaller*, *higher*, *wider*. Such changes occur over time and are fairly predictable.

**Quantification**—determination of how much or how many.

**Quantitative change**—change described using mathematical language that incorporates more precise numeric language (the use of exact amounts), such as shoe size from 10–11 or sunflower grows 3 cm.

**Repeating pattern**—a sequence of colors, shapes, sounds, or other attributes that occurs again and again, such as red-red-blue, red-blue-blue . . . ; loud-soft-soft, loud-soft-soft . . . ; circle-square, circle-square . . . .

**Seriation**—the process of ordering or creating a sequence based on a specific attribute, such as length, height, capacity, weight, or amount of time.

**Skip-counting**—counting by 2s, 5s, 10s, or other intervals, beginning with any whole number.  
*Examples:* 5, 10, 15, 20; 7, 9, 11, 13

**Sorting**—creating collections of objects that share a common attribute.  
*Example:* See circle/rectangle collections below.



**Spatial orientation**—understanding and operating on relationships between different positions in space.

**Spatial relationship**—the positions of objects and people in space relative to each other.

**Tally**—count data using slash marks, with every fifth slash mark crossing the prior four.  
*Example:*  $\text{||||} \text{||}$  (7)

**Trapezoid**—a quadrilateral with one pair of parallel sides.

## Sources

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